UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF NEW YORK

SAMUEL M. ROBERTS,

Plaintiff,

vs.

LOS ALAMOS NATIONAL SECURITY, LLC, AWE, PLC., MASSACHUSETTS INSTITUTE OF TECHNOLOGY,

Civil No. 11 CV 6206L

Defendants,
Third-Party Plaintiffs,

vs.

UNIVERSITY OF ROCHESTER

Third-Party Defendant.

AFFIDAVIT IN OPPOSITION TO PLAINTIFF'S MOTION FOR PARTIAL SUMMARY JUDGMENT AND IN FURTHER SUPPORT OF DEFENDANT LOS ALAMOS' MOTION FOR SUMMARY JUDGMENT

STATE OF NEW YORK)
COUNTY OF MONROE) ss:

Beryl Nusbaum, being duly sworn, deposes and states:

1. That he is an attorney admitted to practice before the United States District Court for the Western District of New York and is a member of the firm of Woods Oviatt Gilman LLP, attorneys for the Defendant Los Alamos National Security, LLC ("LANL") and is familiar with the facts and circumstances of this case.

2. That this Affidavit, together with the Affidavits of Dr. Hans Herrmann, Dr. Steven H. Batha and Dr. Randall Kanzleiter, are submitted in opposition to Plaintiff's Motion for

Partial Summary Judgment against LANL and in further support of LANL's Motion for Summary Judgment dismissing Plaintiff's Complaint against it.

3. That, as set forth in the Affidavits of Dr. Vladimir Glebov (Dkt. No. 58-4) and Samuel F.B. Morse (Dkt. No. 57) of the University of Rochester, the Light Pipe was solely under the control of the University; that only University employees were permitted to have any contact with it; that it had been designed, assembled, maintained, repaired, and adjusted solely by employees of the University of Rochester and that no non-university person, no matter what his role, could have any involvement in its adjustment, repair, maintenance, or in its design or assembly (Glebov Dkt. No. 58-4 ¶ 12, 13 and Morse Dkt. No. 57 ¶ 3, 6, 10 and Dkt. No. 69-1 ¶ 3, 4). That those Affidavits further provide that the Light Pipe had been in operation for approximately two (2) years prior to the occurrence of the incident, had been properly qualified as required by all University regulations, that Dr. Glebov was the Principal Investigator responsible for qualifying the Light Pipe, and that if it were not qualified it could not appear on the list of diagnostics available for use on August 6, 2008 (Morse Dkt. No. 69-1 ¶¶ 4, 6, 10, 19 and Dkt. No. 57 ¶¶ 3, 7).

4. That Plaintiff's Motion for Partial Summary Judgment asserts, without any factual support from anyone with personal knowledge, that LANL is responsible for Plaintiff's on-the-job injury at the University of Rochester's Laboratory of Laser Energetics ("LLE") which occurred on August 6, 2008. That Plaintiff's counsel develops this theory by claiming, without factual support, that the Light Pipe was not properly qualified, that it was LANL's Dr. Hans Herrmann's responsibility to qualify it and that it should have been qualified two (2) weeks before the test date, August 6, 2008. That, in fact, the evidence conclusively demonstrates that Plaintiff was injured after he was sent into the Target Bay of the laboratory by LLE's Dr. Vladimir Glebov to adjust the pressure system attached to a diagnostic piece of equipment

known as the Light Pipe and after advising Dr. Vladimir Glebov that he knew how to carry out that activity (Glebov Dkt. No. 58-4 ¶ 21).

5. That Plaintiff's Motion for Partial Summary Judgment is solely based on the Declaration of Plaintiff's counsel, Louis J. Micca, and it is not supported in any manner by an affidavit from anyone having personal knowledge concerning the Light Pipe, the University's policies and procedures, the operation of the Laboratory for Laser Energetics, or from anyone having any knowledge of the University's practices regarding the qualification of diagnostics. It also includes no affidavits from anyone having personal knowledge of Plaintiff's accident, the control, supervision, or management of the equipment at the LLE, or its design, assembly, utilization, operation, or qualification of the diagnostic involved in the accident.

6. That Plaintiff's motion does not even include an affidavit, statement or declaration from the Plaintiff himself, despite the fact that the Plaintiff had been a ten (10) year employee of the LLE, had reported directly to Dr. Vladimir Glebov, the LLE Principal Investigator, and had entered the Target Bay at the LLE at Dr. Glebov's direction and was the last person to perform service on the Light Pipe before the accident. Plaintiff himself offers no sworn statement that supports the theory in his counsel's declaration.

7. That Plaintiff's counsel's theory appears to be that Dr. Hans Herrmann, an employee of LANL and the Principal Investigator in connection with what was known as the DT Ratio Experiment, also acted as the Principal Investigator for the University of Rochester's proprietary diagnostic known as a Light Pipe which had been designed, assembled, installed, maintained, and serviced by the LLE and that he had also a duty to qualify that diagnostic as safe for use at the laboratory two (2) weeks before August 6, 2008. Mr. Micca's personal interpretation of the LLE's documents is the only submission that makes this argument. That, as set forth in Affidavits previously submitted by Dr. Glebov and Mr. Morse, that theory, as

explained by them, is not correct (Glebov Dkt. No. 58-4 ¶¶ 10, 12, 13, 14 and Morse Dkt. No. 57 ¶¶ 4, 5, 6).

8. That, as set forth in the Affidavit of Dr. Hans Herrmann, while he was the Principal Investigator for the DT Ratio Experiment, he prepared the Shot Request Form ("SRF") listing the diagnostics that would be available for use during the DT Ratio Experiment test to measure the results of the tests being conducted and that what he did was seek the approval of Dr. Vladimir Glebov for including the Light Pipe as a diagnostic and, after Dr. Vladimir Glebov provided that approval, the FASC Committee of the University of Rochester issued final approval for use of the diagnostic as a test device (Herrmann Dkt. No. 66-2 ¶¶ 5 and 10).

9. That the accident occurred in an area of the LLE known as the Target Bay which was under the complete supervision of the LLE and, as also set forth in Dr. Herrmann's Affidavit and confirmed in the Affidavits of Dr. Glebov and Mr. Morse, the Light Pipe was a proprietary instrument for which Dr. Vladimir Glebov was the Principal Investigator. That, not only did Dr. Glebov have responsibility as Principal Investigator for the design, assembly, maintenance, repair, and use of the Light Pipe, but that neither Dr. Herrmann nor any LANL employee had anything to do with its design, assembly, maintenance, repair, or qualification (Herrmann Dkt. No. 66-2 ¶¶ 7, 11, 12, 15). In fact, it was Dr. Herrmann's belief that, prior to the accident, he had never seen it. His Affidavit also sets forth the fact that he could not enter the Target Bay where the University of Rochester had assembled its diagnostic or even approach it without an LLE escort (Herrmann Dkt. No. 66-2 ¶ 7).

10. That, as set forth in the Affidavits of Samuel F.B. Morse of the University of Rochester and Dr. Vladimir Glebov, the University of Rochester maintained sole authority, sole control and sole responsibility over the Light Pipe and no non-LLE employee was allowed to have any involvement with it whatsoever (Glebov Dkt. No. 58-4 ¶ 8 and Morse Dkt. No. 69-1 ¶¶

3, 4, 6, 14, 15, 16).

11. That the Memorandum of Law submitted on Plaintiff's behalf does not dispute the fact that the issue of duty of care is a question of law for the court to decide, but instead argues that Plaintiff can establish a duty of care if he shows that the Defendant "launched an instrumentality of harm, created a risk or enhanced it, or that a defendant voluntarily assumed a duty to him". However, Mr. Micca provides absolutely no factual basis for asserting that Los Alamos did any of the things to which he refers, but provides only his own suppositions and unsupported inferences from his reading of certain University of Rochester documents. That these suppositions are consistently refuted by University of Rochester personnel with direct personal knowledge of the facts.

12. That attached hereto as **Exhibit "A"** is the OSHA Investigative Report covering the occurrence of this incident and **Exhibit "B"** which is the LLE Self Analysis Report covering this incident. That in each case both OSHA and the LLE itself assign full control, authority and responsibility to the LLE. That at no point do either of these two (2) investigations provide any basis for a claim that Dr. Herrmann or anyone at LANL had any involvement that could in any way be conceived as having a causal connection to Plaintiff's unfortunate injury. The University of Rochester report (Exhibit B) never makes a statement that Dr. Herrmann had any responsibility for the accident. In his Affidavit Mr. Morse specifically says Dr. Herrmann had no responsibility for the accident whatsoever as far as the University of Rochester was concerned (Morse Dkt. No. 57 ¶¶ 3, 7, 8 and Dkt. No. 69-1 ¶¶ 1, 3, 7, 8). As set forth below, Plaintiff's counsel has misquoted the report.

13. That your deponent respectfully submits that an attorney declaration without any supporting factual evidence in admissible form or support from anyone having knowledge of the facts to support his theory forms no basis for any determination in this proceeding.

14. That, in reality, this is a premises liability case and the entire premises were under the control of the University of Rochester. Los Alamos had no control over the premises or the Light Pipe. Without such control there is no basis for Plaintiff's claim.

15. Nothing in any of Plaintiff's filings provides any basis for a claim that Los Alamos "voluntarily assumed a duty of care to Plaintiff", especially given the fact that Los Alamos had no knowledge of or involvement in Dr. Glebov's request that Plaintiff adjust the pressure on the Light Pipe between experiments. In addition, there is no evidence that Los Alamos did anything to enhance the risk that may have existed because of the actions of the University of Rochester and the manner in which it assembled, installed or serviced the Light Pipe since Los Alamos had no authority or involvement in anything concerning those activities.

WHEREFORE, your deponent respectfully requests that Defendant Los Alamos' Motion for Summary Judgment dismissing Plaintiff's complaint be granted.

/s/: Beryl Nusbaum
Beryl Nusbaum, Esq.

Sworn to before me this
7th day of November, 2012.

/s/: Amy L. Blakley
Notary Public

Amy L. Blakley
Notary Public, State of New York
No. 01BL6170635
Qualified in Monroe County
Commission Expires July 9, 2015

EXHIBIT “A”

UNITED STATES OF AMERICA

OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION

ELAINE L. CHAO, SECRETARY OF LABOR, UNITED STATES DEPARTMENT OF LABOR, Complainant, v. UNIVERSITY OF ROCHESTER LAB FOR LASER ENERGETICS Respondent.	OSHA Docket or Inspection No. 312400856

STIPULATED SETTLEMENT

CAROL A. DE DEO
Deputy Solicitor for
National Operations

PATRICIA M. RODENHAUSEN
Regional Solicitor

DIANE C. SHERMAN
Counsel for Occupational Safety
And Health

U. S. Department of Labor
Attorneys for Secretary of Labor
Complainant

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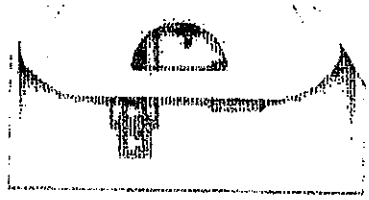


UNITED STATES OF AMERICA

OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION

ELAINE L. CHAO, SECRETARY OF LABOR, UNITED STATES DEPARTMENT OF LABOR,	:	OSHRC Docket or Inspection No.
Complainant,	:	312400856
v.	:	
UNIVERSITY OF ROCHESTER LAB FOR LASER ENERGETICS	:	
Respondent.	:	

STIPULATED SETTLEMENT

Based upon the following recital, the Complainant and the Respondent herein agree to the following as a conclusion of this matter:

1. The Complainant, Secretary of Labor, United States Department of Labor, hereby withdraws Item #3 and 8 of Citation #1.

2. The Complainant, Secretary of Labor, United States Department of Labor, hereby groups and renumbers the following items:

ORIGINAL CITATION NO.	ORIGINAL ITEM NO.	AMENDED CITATION NO.	AMENDED ITEM NO.
1	1	1	10a
1	2	1	10b
1	6	1	10c
1	7	1	11a
1	9	1	11b

3. The Complainant, Secretary of Labor, United States Department of Labor, hereby amends the notification of proposed penalty to reflect a total amended proposed penalty of $25,200.00 to be assessed as follows:

CITATION NO.	ITEM NO.	ORIGINAL PROPOSED PENALTY	AMENDED PROPOSED PENALTY
1	10a	$ 6300.00	$ 6300.00
1	10b	$ 6300.00	grouped
1	3	$ 6300.00	withdrawn
1	4	$ 6300.00	$ 6300.00
1	5	$ 6300.00	$ 6300.00
1	10c	$ 6300.00	grouped
1	11a	$ 6300.00	$ 6300.00
1	8	$ 6300.00	withdrawn
1	11b	$ 6300.00	grouped
	TOTAL PROPOSED PENALTY	$56700.00	$25200.00

4. Based upon the above, the Respondent, UNIVERSITY OF ROCHESTER LAB FOR LASER ENERGETICS, herein withdraws its notice of contest as to the citations and notifications of proposed penalty, as modified herein.

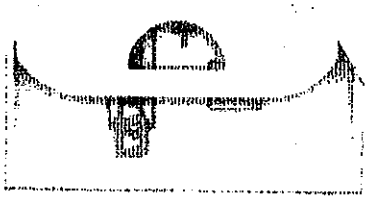
5. Respondent affirmatively states that all items have been abated.

6. Respondent affirmatively states that it will comply in the future with the Occupational Safety and Health Act.

7. Respondent certifies that on _____, this stipulation will be posted where affected employees may see it.

8. On or before March 4, 2008, Respondent will pay the amended proposed penalty of $25,200.00 by forwarding a check made payable to "U.S. Department of Labor/OSHA" in that amount to the U.S. Department of Labor office at 130 S. Elmwood Avenue, Suite 500, Buffalo, NY 14202.

9. This proposed Stipulated Settlement is not to be taken as an admission for the purpose of any proceeding other than one arising under the Occupational Safety and Health Act.



10. Each party hereby agrees to bear its own fees and other expenses incurred by such party in connection with any stage of this proceeding.

DATED:

New York, New York

CAROL A. DE DEO
Deputy Solicitor for
National Operations

PATRICIA M. RODENHAUSEN
Regional Solicitor

By:

DIANE C. SHERMAN
Counsel for Occupational Safety
And Health

U. S. Department of Labor
Attorneys for Secretary of Labor
Complainant

Respondent

By: _____

U.S. Department of Labor
Occupational Safety and Health Administration

Inspection Number: 312400856
Inspection Dates: 08/07/2008 - 12/17/2008
Issuance Date: 01/07/2009

Citation and Notification of Penalty

Company Name: UNIVERSITY OF ROCHESTER LAB FOR LASER ENERGETICS
Inspection Site: 250 East River Road, Rochester, NY 14623

Citation 1 Item 1 Type of Violation: Serious

Section 5(a)(1) of the Occupational Safety and Health Act of 1970: The employer did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that employees were exposed to an explosion hazard:

10 a

a) On or about 8/6/08 in the OMEGA Target Bay area; design of the compressed gas system, comprised of the Arrow Brand Regulator, attachment of regulator to the compressed gas carbon dioxide cylinder, Norgren pressure gauge, US Gauge, and braided tubing from the regulator used to pressurize the diagnostic device commonly referred to as the Light Pipe, was not performed by a person competent in such design.

ABATEMENT DOCUMENTATION REQUIRED

Among feasible methods to abate this hazard is; provide person(s) competent in design and installation of compressed gas systems in accordance with National Fire Protection Association (NFPA) 55, (2005) edition, Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks, paragraphs 7.3.1.2 . Valve outlet connections shall be in accordance with the latest edition of the Compressed Gas Association Pamphlet V-1, American National, Canadian, and Compressed Gas Association Standard, Compressed Gas Cylinder Valve Outlet, and Inlet Connections. Guidance and information related to the selection of regulator can be found in Chapter 3, Section B and the section dealing with Carbon Dioxide as described in the Handbook of Compressed Gases, second edition 1980, published by the Compressed Gas Association.

Date By Which Violation Must be Abated: 02/09/2009
Proposed Penalty: $ 6300.00

U.S. Department of Labor
Occupational Safety and Health Administration

Inspection Number: 312400856
Inspection Dates: 08/07/2008 - 12/17/2008
Issuance Date: 01/07/2009

Citation and Notification of Penalty

Company Name: UNIVERSITY OF ROCHESTER LAB FOR LASER ENERGETICS
Inspection Site: 250 East River Road, Rochester, NY 14623

Citation 1 Item 2 Type of Violation: Serious

Section 5(a)(1) of the Occupational Safety and Health Act of 1970: The employer did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that employees were exposed to an explosion hazard:

105

a) On or about 8/6/08 in the OMEGA Target Bay area; the Light Pipe, being a pressurized device and apparatus of a compressed gas system, was not kept gas tight or provided with a pressure relief device resulting in an instantaneous uncontrolled leak.

ABATEMENT DOCUMENTATION REQUIRED

Among feasible methods to abate this hazard is; design, maintain and operate all apparatus of the compressed gas system used to supply compressed gas to the Light Pipe in accordance with National Fire Protection Association (NFPA) 55, (2005) edition, Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks, paragraphs 7.3.1.4.1. , i.e. gas tight to prevent leakage and or provide a pressure relief device or mechanism.

Date By Which Violation Must be Abated: 02/09/2009
Proposed Penalty: $ 6300.00

U.S. Department of Labor
Occupational Safety and Health Administration

Inspection Number: 312400856
Inspection Dates: 08/07/2008 - 12/17/2008
Issuance Date: 01/07/2009

Citation and Notification of Penalty

Company Name: UNIVERSITY OF ROCHESTER LAB FOR LASER ENERGETICS
Inspection Site: 250 East River Road, Rochester, NY 14623

Citation 1 Item 4 Type of Violation: Serious

Section 5(a)(1) of the Occupational Safety and Health Act of 1970: The employer did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that employees were exposed to an explosion hazard:

a) On or about 8/6/08 in the OMEGA Target Bay area; the use and handling of compressed gas systems (i.e. transfer of compressed carbon dioxide gas from the cylinder to the "Light Pipe") was performed by person(s) not qualified to use the equipment or practices related to this activity.

ABATEMENT DOCUMENTATION REQUIRED

Among feasible methods to abate this hazard is; provide person(s) who transfer compressed gas within a compressed gas system be qualified to perform such activity in accordance with National Fire Protection Association (NFPA) 55, (2005) edition, Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks, paragraphs 7.3.1.1 and 7.3.1.10.1. Guidance and information related to the connecting and withdrawal of compressed gases can be found in Chapter 4, Section A dealing with the General Requirements for Safe Handling of Compressed Gases. Provide accurate written instructions, drawings and procedures for the use of the "Light Pipe" and train Technicians and Engineers responsible for pressurizing and de-pressurizing this device.

Date By Which Violation Must be Abated: 02/09/2009
Proposed Penalty: $ 6300.00

U.S. Department of Labor
Occupational Safety and Health Administration

Inspection Number: 312400856
Inspection Dates: 08/07/2008 - 12/17/2008
Issuance Date: 01/07/2009

Citation and Notification of Penalty

Company Name: UNIVERSITY OF ROCHESTER LAB FOR LASER ENERGETICS
Inspection Site: 250 East River Road, Rochester, NY 14623

Citation 1 Item 5 Type of Violation: **Serious**

Section 5(a)(1) of the Occupational Safety and Health Act of 1970: The employer did not furnish employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to employees in that employees were exposed to an explosion hazard:

a) On or about 8/6/08 in the OMEGA Target Bay area; installation of the "platform plate", from which the "Light Pipe" attached, was mounted using three (3) 1/4"- 20 stainless bolts along and three (3) one inch washers with 1/4" holes. The University of Rochester LLE drawing number D-NP-C-027 shows five mounting holes 0.531 diameter while the Light Pipe support bracket was attached to the "platform plate" using eight (8) 1/2"-13 helicoil inserts.

ABATEMENT DOCUMENTATION REQUIRED

Among feasible methods to abate this hazard is; As per University of Rochester LLE drawing number D-NP-C-027, install and mount the "platform plate" with bolts and/or methods that would have provided a secure installation eliminating or mitigating the unexpected detachment from the overhead mounting surface.

Date By Which Violation Must be Abated: 02/09/2009
Proposed Penalty: $ 6300.00

U.S. Department of Labor
Occupational Safety and Health Administration

Inspection Number: 312400856
Inspection Dates: 08/07/2008 - 12/17/2008
Issuance Date: 01/07/2009

Citation and Notification of Penalty

Company Name: UNIVERSITY OF ROCHESTER LAB FOR LASER ENERGETICS
Inspection Site: 250 East River Road, Rochester, NY 14623

Citation 1 Item 6 Type of Violation: **Serious**

29 CFR 1910.101(b): Section 3.4.5, Compressed Gas Association pamphlet P1-1965, as adopted by 29 CFR 1910.101(b): Suitable pressure regulating devices were not used in all cases where gas is admitted to systems having pressure rating limitations lower than the cylinder pressure:

a) On or about 8/6/08 in the OMEGA Target Bay area; Arrow Pneumatics brand Miniature Air Regulator, with an operating pressure range between 5 to 125 psi. and a supply pressure rating of 250 psi., was being used on a Department of Transportation Size 3A carbon dioxide cylinder with an operating pressure of at least 838 psi. on the diagnostic device commonly referred to as "Light Pipe" which was being operated at 100 psi.

10 c

ABATEMENT DOCUMENTATION REQUIRED

Date By Which Violation Must be Abated: 02/09/2009
Proposed Penalty: $ 6300.00

Citation 1 Item 7 Type of Violation: **Serious**

29 CFR 1910.132(d)(1): The employer did not assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE).

a) On or about 8/6/08 in the OMEGA Target Bay; employer did not assess the workplace place to determine if struck by hazards or strike against hazards were present or likely to be present during assembly, disassembly, pressurizing, evacuating and or monitoring activities associated with the "Light-Pipe" and associated compressed gas system.

ABATEMENT DOCUMENTATION REQUIRED

Date By Which Violation Must be Abated: 02/09/2009
Proposed Penalty: $ 6300.00

11 a

U.S. Department of Labor
Occupational Safety and Health Administration

Inspection Number: 312400856
Inspection Dates: 08/07/2008 - 12/17/2008
Issuance Date: 01/07/2009

Citation and Notification of Penalty

Company Name: UNIVERSITY OF ROCHESTER LAB FOR LASER ENERGETICS
Inspection Site: 250 East River Road, Rochester, NY 14623

Citation 1 Item 9 Type of Violation: Serious

29 CFR 1910.135(a)(1): The employer did not ensure that each affected employee wore a protective helmet when working in areas where there was a potential for injury to the head from falling objects:

a) On or about 8/6/08 in the OMEGA Target Bay; assembly, evacuating, pressurizing, and monitoring of "Light-Pipe" and associated compressed gas system was being performed without the use of head protection.

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ABATEMENT DOCUMENTATION REQUIRED

Date By Which Violation Must be Abated:	02/09/2009
Proposed Penalty:	$ 6300.00

Arthur J. Dube
Area Director

EXHIBIT “B”

Enclosure (1)

Preliminary LLE Incident Report **Number 125**

Area: OMEGA Target Bay

Key Words: personal injury
High Yield Neutron Temporal Diagnostic

1. **DESCRIPTION of INCIDENT:** (describe what happened including indications and the results of the investigation)

At 1824h on 6 August 2008 a serious personal injury occurred in the OMEGA Target Bay while an experimental campaign entitled DT ratio with Dr. H. Herrmann of Los Alamos National Laboratory (LANL) as the lead Principal Investigator (PI) was being conducted. Subsequent to shot 52072, the diagnostic co-PI for the High Yield Neutron Temporal Diagnostic (HYNTD), commonly referred to as the Light-Pipe, that was being operated in the gas (CO_2) Cherenkov mode, requested that the CO_2 pressure be reduced from 100 psig to 50 psig. A Senior Laboratory Engineer (SrLE) who was not an assigned OMEGA watch stander was tasked by the diagnostic co-PI to reduce the pressure. The SrLE tasked does not normally perform this function, but he indicated he knew how to do it, and he proceeded to the Target Bay to perform the pressure reduction.

During this action, four other personnel in the Target Bay (two assigned Experimental Technician watch standers, a LANL technician, and an NSTec technician), heard what was described as a loud bang, a gas pressure release, and a crashing sound. When they investigated they found the SrLE unconscious, face down, and bleeding profusely on the Target Bay floor. They observed the support structure (110 lb) for the Light-Pipe and remnants of the Light-Pipe in the vicinity. They immediately reported their findings to the Control Room and administered CPR to the victim when his breathing stopped several minutes after the event. The Shot Director called 911 and the paramedics arrived at about 1834 and took over first aid and transport to of the injured person to Strong Memorial Hospital.

The investigation revealed that the Light-Pipe structure fell from its support due the use of inadequate mounting bolts (three ¼ inch bolts rather than the apparent design intent of five ½ inch bolts).

2. **IDENTIFICATION OF APPARENT CAUSE**

X Personnel **X Procedure** **_____Equipment** **_____Material**

This incident was caused by the failure to rigorously follow the procedures of LLEINST 7700 Design and Integration of Equipment, and the failure of management to comply with the requirements of LLEINST 3000 Laser Facility Organization and Regulation Manual that requires all new diagnostics be fully qualified two weeks before the date of an experiment. Additionally, the mechanical design and assembly of the Light-Pipe diagnostic was not thorough, and it was assembled and installed by inexperienced and unqualified personnel. Contributing to this incident was a serious drain of resources caused by the

simultaneous construction of the OMEGA EP project while at the same time continuing to operate OMEGA. Specifically:

- The Experimental Operations Group Leader improperly allowed "developmental diagnostics" to be exempted from completing the requirements of LLINST 7700 including final certification for operation. While the instruction allowed operation by developers under operational shot conditions, it does not allow exceptions to the fabrication, installation, and qualification phase requirements including the performance of an Operational Readiness Review. Since the Light-Pipe was exempted from the LLEINST requirements, an Operational Readiness Review that includes the preparation and completion of written fit and function tests, installation, and qualification test plans was not performed.
- The PI and project coordinator for the HYNTD project did not specify to the design engineer that the Light-Pipe would be operated at other than atmospheric pressure. Consequently, the mechanical design did not include the design and specification of the pressure control equipment.
- The Mechanical Design was deficient:
  - The assembly drawing was incomplete and did not represent the as built condition.
  - The fasteners to mount the structure to the supporting target area structure were not specified (however, there were five ½ inch holes provided on the mounting plate).
  - Two of the five ½ inch holes on the mounting plate didn't align with any of the target area structure.
  - The gas pressurization system was not included in the design.
  - The pressure cell cap assembly method at the target chamber end was not specified. Epoxy was chosen for this joint but was not analyzed by ME.
- The desire of the PI to use the diagnostic on impending OMEGA experiments coupled with the failure of management to enforce the requirement that this diagnostic be qualified two weeks before an experiment and a shortage of qualified mechanical assemblers caused the diagnostic to be assembled, installed, and operated by inexperienced and unqualified personnel. This caused:
  - The support structure to be installed with inadequate size and number of fasteners. Experimental Operations personnel participated in the installation of ¼ inch bolts in ½ inch holes but this decision was not elevated to Mechanical Engineering (ME) for analysis
  - The pressure control system to be installed without relief protection and with fittings and a regulating valve that was not rated for the industrial gas bottle pressure source.
  - The procedure to operate the pressure regulating system was not approved and was incorrect.
  - When the mounting of the support structure was questioned by the Principal Investigator, it was not brought to the attention of senior management or the Mechanical Engineering Design Group.

3. CORRECTIVE ACTIONS

a. **IMMEDIATE ACTIONS** (actions taken at the time of the incident to establish stable conditions)

(1) First aid was rendered and 911 called.

(2) Appropriate senior personnel were notified including, the Laser Facility Manager, OMEGA Facility Director, Associate Director for Operations, LLE Laboratory Director, UR Environmental Health and Safety Officer, UR President, and Administrator of the National Nuclear Security Administration.

(3) The Occupational Health and Safety Administration (OSHA) was notified

(4) The accident site was secured pending investigation.

b. **TEMPORARY CORRECTIVE ACTIONS** (actions taken to resume normal operations in advance of completion of permanent actions, identify specific actions, persons responsible, and completion due date)

(1) All potentially hazardous operations at LLE were suspended pending investigation and completion of the requisite actions to ensure the safety of all personnel.

c. **PERMANENT CORRECTIVE ACTIONS** (permanent corrective actions to prevent recurrence, identify specific actions, person responsible, and completion due date)

(1) Non OMEGA and OMEGA EP laboratories will be restarted after the completion of the requirements specified in R.L. McCrory memorandum dated 13 August 2008 (attached). This required a multistep process of reviewing safe operating procedures, group member/Group Leader safety audit of respective laboratories, safety inspection by Division Directors and safety officers, resolution of significant issues, and approval of the Laboratory Director to resume operations upon the recommendation of the appropriate Division Director.

(2) OMEGA and OMEGA EP shutdown watch condition I operations will be resumed after the completion of the requirements specified in R. L. McCrory memorandum dated 13 August 2008 (attached). This required a multistep process of reviewing safe operating procedures, group member/Group Leader safety audit of respective laboratories, safety inspection by Division Directors and safety officers, resolution of significant issues, and approval of the Laboratory Director to resume operations upon the recommendation of the OMEGA Facility Director.

(3) Restart of OMEGA and OMEGA EP watch condition II shot operations will be resumed after the completion of the following additional requirements:

(a) Identification of all experimental diagnostics that have not completed the final LLEINST 7700 Critical Equipment Qualification Checklist (CEQC) process, placing these systems out of commission, and ensuring them to be

in a safe condition. These systems will not be returned to service until the requirements are completed. The following diagnostics were identified, have been verified to be in a safe condition, and were placed out of commission:

- Active Shock Breakout Diagnostic (ASBO) – Operating and configuration procedures are required
- Charged Particle Spectrometer #1 (CPS 1) – Operating procedures are required
- Charged Particle Spectrometer #2 (CPS 2) – Operating procedures are required.
- EMP monitors (EMPMON) – CEQC review and operating procedures are required
- Neutron Diagnostic Inserter (NDI 5) – Redesign, CEQC review, and operating procedures are required.
- 351 Scatter Calorimetry (SCCAL) – Installation and operating procedures and safety review are required.
- X-Ray calorimetry (XRCAL) – installation and operating procedures and safety review are required.
- High Yield Neutron Bang Time (HYNBT) – Full CEQC completion is required.
- High Yield Neutron Temporal Diagnostic (HYNTD) – Redesign and a complete CEQC review is required.
- Neutron Fluence Array (NFA1) – Full CEQC review is required.
- Opacity X-Ray Imager (OXI) – Completed CEQC package must be approved.
- Neutron Scintillators (SSC A-G NTOF) – Mechanical configuration review, installation, inspection, and operating procedures are required.
- TIM based PCD (PCD-1) – Full CEQC completion is required.
- PJX X-Ray Streak Camera (PJX) – Ten inch (diagnostic) manipulator (TIM) installation and operating procedures are required.
- Ultra Fast X-Ray Streak Camera (UFXRSC) – TIM installation and operating procedures are required.
- H11/P11 LLNL PCDs – vacuum system operation procedures and HV interlock.
- TIM TPS (TTPS) – Install and operating procedures.

(b) All OMEGA Facility and Experimental Division personnel involved with the design, assembly, installation, or operation of critical equipment and experimental diagnostics will be trained on the following:

- The requirements of LLEINST 7700 emphasizing that no critical equipment or OMEGA experimental diagnostic will operated until the completion of all requirements including final inspection by qualified inspectors and completion of an Operational Readiness Review.
- Only qualified on watch operators will operate OMEGA facility equipment with the exception that diagnostic specialists may startup and acquire data from self contained equipment such as streak cameras.
- Equipment will only be installed in the OMEGA facility by qualified personnel designated by the OMEGA Facility and Functional Engineering Group Leaders.

(c) LLE instruction will be revised to include a risk assessment and an inspection by the appropriate functional engineering group of all installations with emphasis on those areas with a risk other than zero.

(d) No new or modified experimental diagnostic will be operated unless all of the requirements of LLEINST 7700 have been completed and all certification signatures have been obtained.

(4) The following corrective actions are not prerequisite to the restart of OMEGA but will be completed as indicated:

(a) A chief LLE Safety Officer will be designated. (**Action:** R. L. McCrory by 25 August 2008)

(b) A Mechanical Safety Officer will be designated. (**Action:** R. L. McCrory by 25 August 2008)

(c) All personnel who either design or install pressurized systems will complete a course of instruction relative to design and safety requirements. This course will be patterned after the LLNL course syllabus. (**Action:** M. Shoup by 15 December 2008).

(d) Additional corrective actions, if any, identified by OSHA and University of Rochester Environmental Health and Safety will be completed.

4. **SUBMITTED BY** Samuel Morse — **Person Investigating the Incident** — **Date** 8/19/08

5. **REVIEWED BY** a. Keith R. Thorp — **Laser Facility Manager** — **Date** 8/19/08

b. Samuel Morse — **Laser Facility Director** — **Date** 8/19/08

c. _____ Date 08/19/2008
Associate Director for Operations

6. APPROVED BY _____ Date 08/19/2008
Laboratory Director